

**Statement of Adrian Russell-Falla
Founder and Chairman of RuleSpace, Inc.
Testimony before the U.S. Senate Committee on Commerce,
Science and Transportation**

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INTRODUCTION

Mr. Chairman, Mr. Ranking Member, members of the committee, it is my pleasure and honor to testify before you this morning. My name is Adrian Russell-Falla, and I am the founder and chairman of RuleSpace, Inc. We are a three-year old pioneering Internet software company and our history reflects the Internet's explosive rise, which has been a transformational force in our industry, and, increasingly, in society at large. Like you, we at RuleSpace share the universal concerns of parents about Internet pornography and our company is making incredible advances toward solutions.

I sincerely hope that sharing my business – and personal – experiences with you will help illustrate the importance of allowing local communities to choose their own Internet filtering software—or as we call it, content-control technology—and establish their own certification standards. Because the Internet software community is making strides almost DAILY, we believe it's critical that parents, teachers and librarians have the opportunity to take advantage of the most RECENT filtering software, and are not hindered by federal laws that would prevent them from doing so.

I have read Senator McCain and Senator Hollings' legislation, S. 97, The Children's Internet Protection Act. While I have some reservations, I believe CIPA is clearly superior to COPA, the Child Online Protection Act—a recent example of legislation that many of us in the Internet community have come to fear in recent months.

BACKGROUND ON RULESPACE

RuleSpace has historically reached customers directly over the web to sell them software, short-circuiting traditional distribution. As a result, we have learned first-hand about electronic commerce, privacy, consumer confidence, and other related issues.

One issue we have tried to tackle is how people and organizations can manage the huge volumes of information that are starting to deluge us all. As I am sure you are all aware, it's hard to tell efficiently whether a piece of information is tremendously relevant, or irrelevant, if you receive hundreds of e-mails each day. I think most of us are just realizing how fast this whole phenomenon is starting to mushroom beyond our ability to control it.

We intended our first product, WebQuick, as a solution to help people navigate the Web more easily—enhancing browser bookmarks with some simple automated techniques. Our success triggered us to start exploring more powerful techniques for managing information more easily, especially for finding relevant items within the huge information volumes typical of this new digital medium.

So, two years ago, we entered into the field of artificial intelligence, working on content recognition technology. We are working toward powerful, highly automated tools that address the needs of individuals, workgroups, and entire organizations.

In starting RuleSpace, my co-founders and I were risking 100% of our modest savings, and at least 150% of our credit limits—on building a business in this totally unproven environment. Naturally, as the

designated marketer, I trawled all over the web to find examples of companies from which to learn the new marketing rules in this novel world.

I looked at Virtual Vineyards. I looked at the Wall Street Journal. And, I also found a turbulent, innovative and incredibly competitive “adult entertainment” industry. The online porn industry. That industry with virtually the only proven formula online for making money by selling access to so-called information “content.” A great deal of money.

In November last year, I attended a presentation by Forrester Research analyst Mark Hardie, in which he announced his conclusion that in 1998 the online porn industry became a billion-dollar-a-year business—from essentially zero, in about three years.

MY DAUGHTER ALEXANDRA AND THE INTERNET

What a scary prospect to think that Internet porn is so powerful. Which brings me to concerns I share with many others about my family, and particularly my daughter Alexandra Elizabeth Russell-Falla, who will turn 6 at the end of this month.

Naturally, my wife and I are completely convinced Alexandra is exceptional. There is no doubt that she is exceptionally articulate and adventurous, and like most kids growing up today, she is completely unafraid of computers.

As millions of other Americans, my wife and I hope fervently that by bringing the Internet into our home, we can give our daughter a head-start on learning, communication, and opportunity. A couple of months ago, the first studies appeared showing that penetration of PCs now exceeds 50% of all US homes. PCs are getting cheaper by the month; if you sign up to receive a larger-than-usual dose of advertising, you can even get one free. We are at a watershed.

I am extremely aware of how fast new adult web sites spring up out there, and how aggressively they compete for even accidental traffic—with “spam” email and “stealth URLs,” banner advertising and other aggressive marketing techniques. A little more than a year ago, my concern for Alexandra escalated.

Though we haven’t shown her the web yet, and generally contrive to be somewhere in the vicinity when she uses our home computer, one day it struck me that we might very well not happen to be there the first time she experiments with the web browser—especially the way we’ve encouraged her to experiment freely with our word processor, the graphics programs, and even the spreadsheet.

We do not like to hover over her every moment; she is a very independent individual, and independent discoveries, secrets and surprises are after all, an irreplaceable part of childhood. I can only hope that each of you is fortunate enough to know first-hand what it’s like to see a child’s face as she shows you something she is drawn, printed out and colored for you, “by surprise”—all by herself.

SEARCHING FOR A SOLUTION

Senators, committee members; at the risk of stating the incredibly obvious, across this country, parents are distributed over the entire political spectrum. Many strongly conservative, many strongly liberal, lots—like my wife and I—smack dab in the middle. If media coverage is any measure, the country seems to find a great deal more to disagree vehemently about, than otherwise.

But I have talked to a lot of parents, Senators, and I have found universal agreement on one thing: parents do NOT want their small children to stumble onto some of the hard-core sites that are literally just one accidental typing mistake away, never mind containing their mischievous exploration. There are some explanations that you just ought not to have to give a small child, no matter what you believe is appropriate for adults. Parents do not want that to happen at home, parents do not want that to happen at

school, and parents do not want it to happen at a public library. And, lest we forget, parents are usually taxpayers.

Like millions of other parents grappling with these issues, I started at home. I went looking for a product that would address our concerns, allowing our daughter to wander freely and safely, exploring the wonderful new world of cyberspace that I and my peers all over the world have been working so diligently to build.

I found CyberPatrol, Surfwatch, NetNanny, and other products of that ilk. I was simply surveying the first generation of this product category, like anyone else might. One after another, I downloaded them, and I tried them.

And I found them wanting.

These are products largely designed by people from the security industry. Their core design dates from the web's earliest days, when it was still quite small. When there were just a few thousand web sites. When a team of hard-working people could seriously propose to catalog them all—the good and the bad, reviewing each site and checking off a form—categorizing the world-wide web from a boiler-room processing center in Minnesota. Or for that matter, in Vancouver, Canada.

The problem with these database-driven (or we call them, list-based) products are bone-crushingly simple. For the last three years, the web has been growing exponentially, week by week, day by day, minute by minute. There is no end in sight.

There are now 1.5 million web pages being added every day. Data from one of our partners indicates that over 20 million web pages change every day. A new web site is currently being registered every 16 seconds.

There is no way that any process that requires that people directly assess this rapidly-rising ocean of content can survive that scale of onslaught. And it has not.

As my first-hand customer research quickly revealed, the first-generation products have created a lot of unhappy customers. A lot of antipathy.

Why? Because they just do not work very well. They take shortcuts, desperately trying to stem the tide. And they have developed a really bad reputation. As one respected research firm, the Gartner Group, remarked in a review of business-oriented filtering products, this is not a category that has done very well historically. You can verify that easily yourselves by looking online at the business results of some of the publicly quoted companies. After all, if these first generation solutions had worked, you would not have needed to have this hearing.

People have been complaining loudly about gaping holes in protection—the inevitable result of the explosive growth of the billion-dollar porn industry, and of the web as a whole. List-based products cannot keep up with that growth. Their reviewers cannot find new sites quickly enough.

Compounding this, many of the first-generation products tried to be all things to all people, blocking out everything anyone anywhere might find offensive.

Earlier I described the deficiencies of list-based products; any product that talks about the use of keywords is also one to avoid. Keywords are a crude response to the crisis that overwhelmed the list merchants, and that have gained notoriety blocking people from accessing Breast Cancer Support Group sites, and recipes involving chicken breasts, all because they happen to mention a certain body part.

The American Library Association recently responded to the growing demand for solutions in public

libraries by conducting a study into what was available at the time. They understandably concluded that the first-generation products, the SurfWatches and NetNannies, with their list-based and keyword-based approaches, constituted what I'd paraphrase as a clear and present danger to free access and to freedom of speech.

HOW WEBCHAPERONE WORKS

By happy coincidence, RuleSpace was beginning to see substantial promise emerging in our artificial intelligence development—research to help people deal with, to organize and prioritize information streams.

We are using the same kind of neural network architectures that the US Government sponsored in its groundbreaking work on early-warning missile detection systems. Techniques were being developed to detect missile launches remotely from space—to react immediately to the heat signatures of rocket exhausts, without triggering DefCon 3 because the sunlight flashed off a rearview mirror in Red Square...

Now, at RuleSpace we're nervous about using the term artificial intelligence, because it comes with some baggage. Quasi-technical people are particularly suspicious about using artificial intelligence techniques to evaluate and categorize, and often assert as a point of dogma that it cannot possibly work.

However, the power of cheap processors and memory, plus the research that never actually stopped through the last couple of decades, is at last beginning to pay off. You can actually buy products today that can recognize your fingerprints, or take dictation, for instance, by transcribing your speech into text.

We are an awfully long way away from Robby the Robot, Commander Data or C3P0, but we are successfully addressing some difficult intellectual problems. The general secret is to focus on specific problems... A whole new generation of extremely impressive artificial intelligence-based products is beginning to emerge.

What we are able to do at RuleSpace is pour a huge amount of examples of a particular content type into a database, hundreds of thousand of examples in fact. We then add in a similar number of counter-examples—stuff randomly selected from the rest of the universe.

Our neural networks boil down from all of this the key characteristics that tend to distinguish the two. You might think of it as identifying a digital fingerprint, or profile. It's a powerful approach, that weighs a vast number of different characteristics. It weighs them very subtly, often observing statistical connections that occur infrequently in correlation with others—things you and I might never stumble over with a lifetime of studying the data sets.

We call the system we have built iCRT, short for "intelligent Content Recognition Technology," and we have patent applications pending.

Of course, the proof of the pudding is in the eating. Our products can scan every incoming web page, in real-time, whether on your home PC or on your network server, and decide instantly, and extremely accurately, if it's a particular kind of information you have told it to look out for. Putting you, at last, in control.

We are focusing on one kind of content at a time. We absolutely have not tried to find every kind of thing that anyone anywhere might ever be upset by. I believe in doing one thing very, very well, before moving on to the next. After all, how useful is a flawed program, anyway?

The thing we have focused on first, the thing we do exceptionally well, the thing that in fact caused USA Today last week to award our product for the home, is what we call WebChaperone. We received from USA Today a perfect four-star review—beating some well-known older list-based products like SurfWatch and NetNanny—for its success in recognizing and controlling access to on-line porn. Online porn is, as I

said, a billion-dollar industry which is aggressively marketed and is THE top concern of parents with Internet access in their homes, according to Family PC magazine Parents looking for answers can download and buy WebChaperone, directly from our web site right now. Like the infomercials say, WebChaperone is not sold in any stores—but you can get it at www.webchaperone.com. And yes, it IS safe to use your credit card.

We have hired recognized experts in the artificial intelligence field to accelerate the work. Scientists like our new CTO, Dan Lulich, and his fellow pioneer Dan Hammerstrom helped build the first neural network machine, and his fellow pioneer Dan Hammerstrom. We have raised some Bay Area capital and grown our team rapidly. We have some partnerships right now, with some large industry names -- companies that provide access to some extremely large collections of “live” Internet content. This is actually helping iCRT to become even more powerful, in real-time. The technology is getting better and better, day by day.

Not only has iCRT become extremely effective at recognizing and stopping porn, it’s also extremely good at not interfering with other kinds of information.

BUSINESS OPPORTUNITIES

Last October, I was here in the Capitol at a lunch event organized by one of the staffs, and we ended up next to folks from the American Library Association. They tried out our product right then against a list of URLs they were using in their talking points for lobbying you all on this topic. A bunch of sites at the National Institutes of Health, as I recall; information about prostate cancer and so forth. These sites are tough for list-based products to find, let alone keep up to date with. WebChaperone’s iCRT engine correctly allowed access to all this stuff, absolutely unhindered.

That’s critically important, because whether in the home, school, library or business—the price of protection is too high if it curtails access to research, to healthcare information, or chicken recipes, for that matter.

A moment ago, I shamelessly pitched WebChaperone. If one were cynical, one would assume RuleSpace would automatically support this legislation out of crude self-interest, hoping to sell lots of filtering software to schools and libraries. I would like to explain why that is not so.

One of the reasons we were able to raise investment capital is that we clearly have a substantial business opportunity—with business itself.

For the last two years, corporations have been cramming Internet access onto every desktop as fast as they can go, accelerating communication and cutting costs.

We have just started shipping a content-control product for large companies, called RuleSpace Enterprise Suite. Companies desperately need policy tools to protect themselves against the enormous risk of corporate liability, of lawsuits. A huge portion of the bandwidth and productivity in corporate America is being sucked up, right now as we sit here, as people surf porn sites from their workplace.

This is creating the sort of legal risk that gives vice-presidents for Human Resources, corporate lawyers, and Chief Information Officers heartburn and keeps them up at night.

And as our investors understand, companies are starting to spend a lot of money to address these problems. None of them wants to wake up to morning newspaper headlines announcing their company’s involvement in a “hostile workplace” or sex-discrimination lawsuit, citing insufficiently-thorough monitoring and content-control policies. They are looking for better answers from next-generation products. We look forward to selling products like RuleSpace Enterprise Suite to them! The size of that business makes the opportunity that education and libraries represent—even engorged by federal funds—look rather limited by comparison.

With our focus moving heavily toward the large business market, the best way to make our technology available to schools and libraries is not to sell it ourselves. We have partnered with SmartStuff Software, a leading educational software company. SmartStuff is adding iCRT technology to offerings that help teachers manage computers in schools. Later this month, they will release a line of iCRT-powered school-focused products, first for network servers, and then products that can be installed on individual desktops. You heard it here first, incidentally.

We get a very modest percentage of those sales. We primarily benefit from additional exposure for our technology brand—and from our altruistic side, from knowing that schools and libraries can continue to provide safe, enriching experiences for kids.

We are not looking at the legislation you are considering today as a huge business opportunity, with an enormous federal windfall. And we are definitely not looking for a handout.

Instead, as a parent of a nearly-six-year-old girl myself, I well understand the revulsion parents feel at the prospect of their young kids making an errant mouse-click, or transposing two letters on a keyboard when typing in a web address, and stumbling into the online equivalent of a yellow-front “bookstore,” the kind of establishment you’d expect to find only in the seamiest districts of one of our bigger cities.

The fortuitous timing of an American Library Association’s study left the library community deeply apprehensive about the mandatory introduction of tools which—at their best—should give them the same degree of control over the access and organization of Internet materials as they absolutely maintain over the physical collections of books and periodicals they’ve administered for centuries, but—if judged by the first generation—have only shown themselves to be of limited use, and questionable completeness.

But frankly, first-generation technology products invariably stink, as my engineer colleagues would remark. The key thing is that they also get better. Fast.

CONCLUSION

Senators, I am an immigrant. I come from a country without a written Constitution, a Bill of Rights; actually, the very country from which those documents formed the crux of the American Revolution. One paid for in blood by this country’s earliest patriots! I am here because America represents to people all over the rest of the world the highest aspiration for freedom, the most robust example of our time. A place that has stood as a beacon of tolerance in a world frequently driven by conflict, suppression and hatred. I was born in the British Channel Island of Guernsey, which was forcibly occupied by Nazi troops in the Second World War. My parents were evacuated in the nick of time, one step ahead of the Luftwaffe, Wehrmacht, and the Gestapo. Later, I grew up playing among the concrete bunkers that dot the coastline to this day, remnants of Hitler’s Atlantic Wall.

So I hope you will understand my depth of feeling when I say that I burn with an unyielding passion to defend the core principles that lie at the foundation of these United States.

As you might imagine, as a member of the Internet community I am therefore generally extremely hesitant, if not uncomfortable, at the thought of government involvement in the Internet.

Let me restate what I see as the positive aspects of S.97: 1) the legislation ensures that local authorities can choose the technology that best serves their needs, and 2) it makes sure that local authorities will retain the right to establish their own certification standards. This is of the utmost importance, because, again, technology evolves so quickly that the last thing we would want is for government to impose solutions that will be quickly outdated.

It’s the genius of this industry that we never rest, that we are always searching for new and better answers,

and it's the genius of this country that we embrace those new answers faster than anywhere else in the world.

RuleSpace is a pure example of American enterprise. As I said earlier, like most business people, we are frankly a little cynical, disinclined to expect great results from legislation in general. We have learned that just because we are moving so fast that we cannot just feel free to do as we please, and ignore or pooh-pooh public concern, which is why I have invested the time to come here today.

To the contrary, the fact that Internet technology is rapidly transitioning, while we watch, from mere engineering novelty into a seamless melding with and powerful influence over, daily life across the planet, means that it's time for us to grow up, and do a better job facing our collective responsibility to accommodate the broad needs of society.

I happen to think that the merits of our products will prove themselves, and I put great trust in the general common-sense and sense of mission of our country's dedicated, under-appreciated teachers and librarians. It's not clear to me that legislation is required, but it is crystal clear that powerful tools are indeed called for—and at RuleSpace, we believe we can contribute an important part of the answer.

I want to emphasize that I would be extremely distressed if, during consideration of this measure, communities were stripped of the choices currently ensured by your measure. Furthermore, much of the Internet community—including many parents—would be more comfortable if this legislation included a moratorium to block future expansion of the criteria. It would be a grave mistake if this legislation could be used in the future to impose broad regulation and restrictions on the Internet.

Let me close by observing that I do not envy you your deliberations, because you cannot fail to aggravate one faction or another. And, unfortunately, the debate itself will be frequently characterized by a lot more heat than light.

Thank you Mr. Chairman for your invitation to testify here today, and I hope that my observations might prove useful in your deliberations. If you have questions, I would be glad to address them.